IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

WILLOW INNOVATIONS, INC.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	No. 2:23-cv-00229-JRG
	§	
CHIARO TECHNOLOGY, LTD.,	§	
	§	
Defendant.	§	

CLAIM CONSTRUCTION ORDER

In this patent case, Willow Innovations, Inc., and Chiaro Technology, Ltd., (Elvie) each assert infringement claims against the other. Willow alleges infringement by Elvie of U.S. Patents 10,398,816, 10,625,005, 10,688,229, 10,434,228, 10,722,624, and 11,185,619. It also alleges infringement of two design patents—U.S. Patent D832,995 and D977,625. Elvie counterclaims for infringement of U.S. Patent 11,260,151. All of the patents relate to breast pumps.

Together, the parties dispute 11 "groups" of terms from the patents. Having considered the parties' briefing along with arguments of counsel at a September 24, 2024, hearing, the Court resolves the disputes as follows.

I. BACKGROUND

A. U.S. Patents 10,398,816, 10,434,228, and 11,185,619

These related patents share the same specification. *See* '816 Patent at [63]; *see also* '619 Patent at [63]. They identify "a continuing need for a small, portable, self-powered, energy efficient, wearable breast pump system that is easy to use and is discrete by not exposing the breast of the user and being invisible or nearly unnoticeable when worn." '816 Patent at 1:35–39. The

patents also note the desirability of monitoring a nursing baby's intake to ensure the baby is receiving adequate nutrition. *Id.* at 1:40–41. The patents thus teach "a breast pump system that easily and accurately monitors the volume of milk pumped by the system, to make it convenient for the nursing mother to know how much milk has been extracted by breast pumping." *Id.* at 1:41–45.

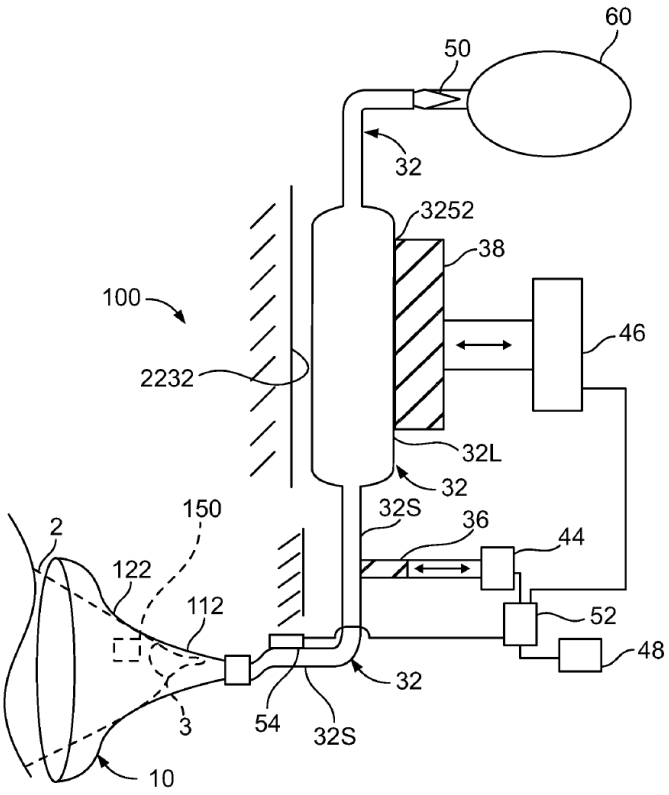

FIG. 20 of the '816 Patent

Figure 20 (above) of the '816 Patent shows an embodiment 100 of a system in contact with a user's breast 2. The system includes compression members 36, 38, a battery 48, a one-way valve 50, a controller 52, a sensor 54, and a collection container 60. The sensor 54 determines the pressure to which the breast 2 is exposed and provides that information to the controller 52. Using that information, the controller 52 adjusts the position or speed of the compression members 36, 38 to vary or maintain the suction pressure. *See generally* '816 Patent at 29:15–30:19.

All of the disputes from the ’816 Patent concern terms only in Claim 1, which is directed to a breast pump system that includes a breast pump communicating with an external computer. Specifically, Claim 1 recites:

> 1. An automated breast pump system for pumping milk from a breast of a user, comprising:
>
> a breast pump configured to fit within a bra, the breast pump including:
>
> a breast pump shell housing a milk flow path;
>
> a **pumping mechanism**, the **pumping mechanism contained completely within** the breast pump shell;
>
> a fluid container configured to directly engage and be supported by an outer surface of the breast pump shell, wherein the fluid container is connected to the milk flow path;
>
> a flange attached to the breast pump shell and configured to receive the breast, the flange including a rigid nipple receiving portion and a bottom portion, the bottom portion configured below the nipple receiving portion during use, the nipple receiving portion including a proximal end defining an opening; and
>
> an external computer that automatically tracks pumping and communicates with the **pumping mechanism**;
>
> wherein the **pumping mechanism** is associated with the rigid nipple receiving portion and the **pumping mechanism** is configured to create a suction force from the rigid nipple receiving portion, **the suction force and the milk flow path both being directed generally upward relative to the bottom portion of the flange**.

’816 Patent at 50:45–51:2 (disputed terms in bold).

Claim 1 of the ’619 Patent recites:

> 1. An automated system for controlling pumping cycles to pump milk from a human breast, the automated system comprising:

a breast pump shaped to fit within a bra, the breast pump including:

a housing;

a **vacuum pumping mechanism contained within** the housing and configured to pump the milk from the human breast;

a wireless transmitter;

a skin contact member configured to contact and form a seal with the breast, the skin contact member attached to the housing and including a nipple receiving portion;

a milk collection container having a rigid exterior surface configured to contact the bra; and

a non-contact pressure sensor that measures vacuum levels within the automated system, the non-contact pressure sensor adjacent the nipple receiving portion.

’619 Patent at 50:44–61 (disputed terms in bold).

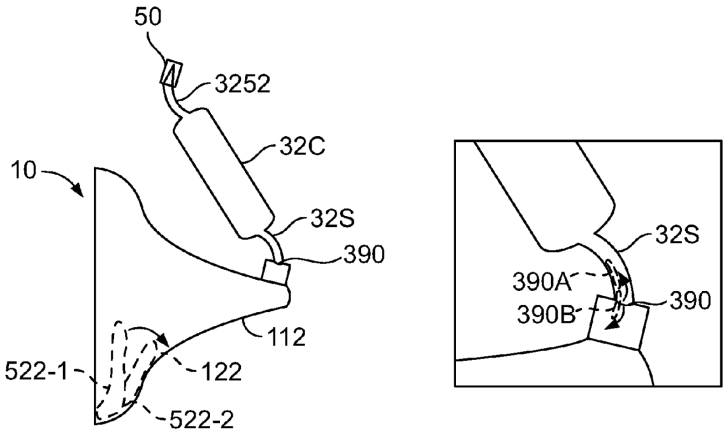

FIG. 39A (left) and FIG. 39B (right) of the ’228 Patent

The claims of the ’228 Patent are directed to minimizing the loss of milk from the pumping system when the system is detached from the breast. To accomplish this, the patent teaches a structural arrangement like the one shown in Figures 39A–39B (above). The system includes a valve 390 in a small tube 32S. The valve opens “upwardly” when only a very small vacuum is generated

in tubing 32, but stays closed under the pressure of milk when the tubing 32 is completely filled. With this arrangement, the system can be unsealed and detached from the breast 2, but the milk in the tubing 32 will not escape through the closed valve 390. *See generally* '228 Patent at 42:1–25. Claim 11 recites this arrangement as:

> 11. An automated system for controlling pumping cycles to pump milk from a breast, the automated system comprising:
>
> a breast pump configured to fit within a bra, the breast pump comprising a breast pump housing;
>
> a breast contacting structure configured and dimensioned to form a seal with the breast;
>
> a milk flow path; and
>
> a collection container for storing milk pumped from the breast;
>
> wherein the milk flow path and collection container are **contained within** the breast pump housing;
>
> **wherein milk extracted from the breast flows to the collection container upwardly through the milk flow path relative to a bottom of the breast contacting structure.**

'228 Patent at 51:17–27 (disputed terms in bold).

B. U.S. Patent 10,688,229 and 10,722,624

These related patents, which share the same specification,[1] concern a breast pump system that uses a controller to change between operational modes. The patents teach using a sensor to detect pressure within a tube connecting the breast to the collection container. Based on the pressure sensed in the tube, the controller might change from a mode used to start "letdown"—the

[1] *See* '624 Patent at [63] (noting the underlying application is a continuation of U.S. application no. 15/180,345, which is the application from which the '229 Patent issued).

process by which milk is released from the milk glands into the milk ducts—to an extraction mode that adjusts compression to maintain a predetermined suction. *See generally* '624 Patent at 40:1–19.

Claim 1 of the '624 Patent recites:

> 1. An automated system for controlling pumping cycles to pump milk from a human breast, the system comprising:
>
> a breast pump shaped to fit within a bra, the breast pump including:
>
> a housing sized to fit within the bra;
>
> a breast adapter configured to contact and form a seal with the breast, the breast adapter being attached to the housing and including a nipple receiving cavity;
>
> a **pumping mechanism contained within** the housing, the **pumping mechanism** including a pumping region above the nipple receiving cavity;
>
> a wireless transmitter;
>
> a milk collection container configured to contact the bra;
>
> a sensor which detects when the milk collection container is full;
>
> an indicator light; and
>
> a controller contained within the housing that automatically changes application of suction on the human breast through the nipple receiving cavity by the **pumping mechanism** from a letdown phase to an expression mode, wherein the controller automatically changes application of the suction from the letdown phase to the expression mode upon sensing a letdown.

'624 Patent at 53:12–54:7 (disputed terms in bold).

Claim 1 of the '229 Patent recites:

> 1. A wearable, portable self-powered breast pump system for pumping milk from a breast, comprising:

a main body;

a breast adapter;

a milk collection container; and

a **pump mechanism** configured to pump milk from the breast to the milk collection container;

wherein the breast adapter, the **pump mechanism** and the milk collection container are collectively sized and shaped to fit within a user's bra, and the pump mechanism and milk collection container are contained within the main body;

wherein **a latch suction is maintained throughout a pumping session.**

'229 Patent at 53:11–23 (disputed terms in bold).

C. U.S. Patent 10,625,005

The '005 Patent is entitled "Breast Pump Assembly With Remote Interface." '005 Patent at [54]; *see also id.* at figs.22–28 (showing various aspects of a remote interface). "By tracking the times of use and/or number of uses, or even pump cycle counts, for example, the controller, or external computer can alert the user when it is time to change components or to report on usage aspects." *Id.* at 24:62–65. "In this way, information such as the tracking of extraction date and time, volume extracted, etc. can be recorded and stored with regard to each milk collection container used with the system . . . ." *Id.* at 24:65–25:2.

The disputed terms are found in Claims 1–2. Claim 1 recites:

1. An automated system for controlling pumping cycles to pump milk from a human breast, the system comprising:

a breast pump configured to fit within a bra, the breast pump including:

a **chassis**;

an outer shell attached to the **chassis**;

a **pump mechanism** attached to the **chassis** between the

> outer shell and **chassis**;
>
> a battery contained between the outer shell and **chassis**;
>
> a circuit board contained between the outer shell and **chassis**;
>
> a sensor electrically connected to the circuit board;
>
> a removeable breast contacting structure configured to contact and form a seal with the breast, the breast contacting structure including a nipple receiving portion below the **pump mechanism**; and
>
> a milk collection container;
>
> wherein when the removable breast contacting structure is removed, the **pump mechanism**, battery and circuit board are positioned between the outer shell and the **chassis**;
>
> wherein the **pump mechanism** comprises two drivers that displace a **flexible member** to generate vacuum pressure in the nipple receiving portion;
>
> . . . .

'005 Patent at 28:2–41 (disputed terms in bold). Claim 2 recites "[t]he automated system of claim 1, wherein the breast pump automatically senses letdown." *Id.* at 28:42–43.

D. U.S. Patent 11,260,151

The '151 Patent summarizes the inventive breast pump as "a housing shaped at least in part to fit inside a bra; a piezo air-pump fitted in the housing and forming part of a closed loop system that drives a separate, deformable diaphragm to generate negative air pressure, that diaphragm being removably mounted on a breast shield." '151 Patent at 3:57–62. The patent aims to ensure "the device does not feel top-heavy to a person while using the pump." *Id.* at 7:25–26.

To do this, the claims require the system's center of gravity, when the milk container is empty, to be "substantially at or below the horizontal line that passes through the filling point on

the breast shield." *Id.* at 7:23–25. Specifically, Claim 1 recites:

> 1. A breast pump device that is configured as a self-contained, in-bra wearable device, the breast pump device comprising:
>
> (i) a housing that includes (a) a battery, and (b) an air pump system powered by the battery and generating negative air pressure;
>
> (ii) a breast shield made up of a breast flange and a nipple tunnel; and
>
> (iii) a milk container that is configured to attach to the housing; and
>
> in which a location of **the centre of gravity of the breast pump device is, when in use, below a centre of the nipple tunnel when the milk container is empty.**

Id. at 71:9–21 (disputed term in bold). Claim 22 then requires the breast shield to be "a one piece item that in use presents a single continuous surface to a nipple and a breast . . . ." *Id.* at 72:28–32. The parties dispute whether Claim 1's center-of gravity requirement and Claim 2's "single continuous surface" requirement are indefinite.

E. U.S. Patents D832,995 and D977,625

Willow asserts these two related design patents directed to ornamental designs for a breast pump. *See* '625 Patent at [63]. Elvie asks the Court to hold the claim of the '995 Patent indefinite based on inconsistencies in the figures. Dkt. No. 82 at 25–26. Alternatively, Elvie asks the Court to construe the claims to identify the functional elements. *Id.* at 27–30.

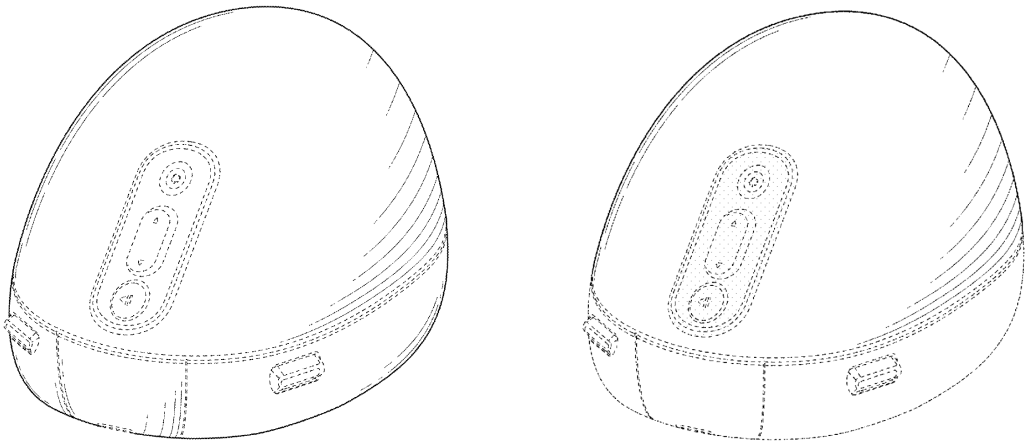

FIG. 1 of the ’995 Patent (left) and FIG. 1 of the ’625 Patent (right)

II. LEGAL STANDARDS

A. Generally

“[T]he claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.,* 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). As such, if the parties dispute the scope of the claims, the court must determine their meaning. *See, e.g., Verizon Servs. Corp. v. Vonage Holdings Corp.,* 503 F.3d 1295, 1317 (Fed. Cir. 2007) (Gajarsa, J., concurring in part); *see also Markman v. Westview Instruments, Inc.,* 517 U.S. 370, 390 (1996), *aff’g,* 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc).

Claim construction, however, “is not an obligatory exercise in redundancy.” *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Rather, “[c]laim construction is a matter of [resolving] disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims . . . .” *Id.* A court need not “repeat or restate every claim term in order to comply with the ruling that claim construction is for the court.” *Id.*

When construing claims, “[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning.” *Aventis Pharm. Inc. v. Amino Chems. Ltd.,* 715 F.3d 1363,

1373 (Fed. Cir. 2013) (citing *Phillips,* 415 F.3d at 1312–13). Courts must therefore "look to the words of the claims themselves . . . to define the scope of the patented invention." *Id.* (citations omitted). The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.,* as of the effective filing date of the patent application." *Phillips,* 415 F.3d at 1313. This "person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.*

Intrinsic evidence is the primary resource for claim construction. *See Power-One, Inc. v. Artesyn Techs., Inc.,* 599 F.3d 1343, 1348 (Fed. Cir. 2010) (citing *Phillips,* 415 F.3d at 1312). For certain claim terms, "the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips,* 415 F.3d at 1314; *see also Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005) ("We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history."). But for claim terms with less-apparent meanings, courts consider "those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean . . . [including] the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Phillips,* 415 F.3d at 1314.

B. Means-Plus-Function Claiming

A patent claim may be expressed using functional language. *See* 35 U.S.C. § 112(f);

Williamson v. Citrix Online, LLC, 792 F.3d 1339, 1347–49 & n.3 (Fed. Cir. 2015) (en banc in relevant portion). Under 35 U.S.C. § 112(f), a structure may be claimed as a "means . . . for performing a specified function," and an act may be claimed as a "step for performing a specified function." *Masco Corp. v. United States*, 303 F.3d 1316, 1326 (Fed. Cir. 2002). When it applies, § 112(f) limits the scope of the functional term "to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof." *Williamson*, 792 F.3d at 1347. "[S]tructure can be recited in various ways, including [by using] 'a claim term with a structural definition that is either provided in the specification or generally known in the art,' or a description of the claim limitation's operation and 'how the function is achieved in the context of the invention.'" *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1366 (Fed. Cir. 2022) (quoting *Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2005)).

C. Indefiniteness

"[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc*., 572 U.S. 898, 901 (2014). The claims "must be precise enough to afford clear notice of what is claimed" while recognizing that "some modicum of uncertainty" is inherent due to the limitations of language. *Id.* at 908. "Indefiniteness must be proven by clear and convincing evidence." *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

D. Construction of a Design Patent

"[D]esign patents typically are claimed as shown in drawings, and . . . claim construction is adapted accordingly." *Egyptian Goddess, Inc. v. Swisa, Inc.*, 543 F.3d 665, 679 (Fed. Cir. 2008) (internal quotation marks omitted). For that reason, trial courts need not provide a detailed verbal

description of the claimed design. *Id.* But "a district court's decision regarding the level of detail to be used in describing the claimed design is a matter within the court's discretion." *Id.*

"[A] trial court can usefully guide the finder of fact by addressing a number of other issues that bear on the scope of the claim." *Id.* at 680. "Those include such matters as describing the role of particular conventions in design patent drafting, such as the role of broken lines, . . . assessing and describing the effect of any representations that may have been made in the course of the prosecution history, . . . and distinguishing between those features of the claimed design that are ornamental and those that are purely functional." *Id.* "Where a design contains both functional and non-functional elements, the scope of the claim must be construed in order to identify the non-functional aspects of the design as shown in the patent." *Oddzon Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1405 (Fed. Cir. 1997).

III. THE LEVEL OF ORDINARY SKILL IN THE ART

A. Generally

The level of ordinary skill in the art is the skill level of a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In resolving the appropriate level of ordinary skill, courts consider the types of and solutions to problems encountered in the art, the speed of innovation, the sophistication of the technology, and the education of workers active in the field. *Id.* Importantly, "[a] person of ordinary skill in the art is also a person of ordinary creativity, not an automaton." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

B. Willow's Asserted Utility Patents

Elvie's expert characterizes a skilled artisan as one with "at least an undergraduate or graduate degree in industrial design, mechanical engineering, electrical engineering, or related field, in

combination with at least five years of related work experience developing medical or personal care devices." Stone Decl., Dkt. No. 75-10 ¶ 18. Willow does not proffer a level of ordinary skill. Accordingly, for the terms found in Willow's utility patents, the Court adopts Elvie's characterization of a skilled artisan.

C. U.S. Patent 11,260,151

For the '151 Patent, Elvie again characterizes a skilled artisan as someone with "at least an undergraduate or graduate degree in industrial design, mechanical engineering, electrical engineering, or related field, in combination with at least five years of related work experience developing medical or personal care devices." Dkt. No. 77 at 9. Willow argues a skilled artisan "would have at least an undergraduate degree in mechanical engineering or related field, in combination with at least two years of related work experience developing medical devices." Dkt. No. 81 at 3. The Court, however, would reach the same conclusion regarding the disputed terms from this patent under either level of skill, so it need not resolve the differences between the parties' proposals.

D. Willow's Asserted Design Patents

The scope of a design patent is determined from the perspective of an "ordinary observer." *See Egyptian Goddess*, 543 F.3d at 678 (holding the "ordinary observer" test is the sole test for infringement of a design patent). An "ordinary observer" is one who would observe the product during its normal use throughout its life—"beginning after completion of manufacture or assembly and ending with the ultimate destruction, loss, or disappearance of the article." *Contessa Food Prods. v. Conagra, Inc.*, 282 F.3d 1370, 1380 (Fed. Cir. 2002). Elvie asserts such a person is "a pregnant woman, a lactating mother, or a friend/family member who may be purchasing baby shower gifts." Fletcher Decl., Dkt. No. 75-11 ¶ 29. Willow does not contest this characterization.

IV. THE DISPUTED TERMS

A. "a pump mechanism" ('229 Patent, Claim 1); "a pumping mechanism" ('816 Patent, Claim 1; '624 Patent, Claim 1; '005 Patent, Claim 1); "a vacuum pumping mechanism" ('619 Patent, Claim 1)

Willow's Construction	Elvie's Construction
Not governed by 35 U.S.C. § 112(f); no construction necessary/and ordinary meaning Alternatively: **Function:** "pumping"/ "vacuum pumping" / "pump" **Structure:** "one or more pumps," or equivalents thereof	Means-Plus-Function **Function:** "creating a suction force to pump milk" **Structure:** actuators and a compressible tube that direct milk generally upward and away from the lower end of the flange when the breast pump is upright"

The parties dispute whether these are means-plus-function terms and, if they are, the proper corresponding structure. Willow argues these terms connote sufficiently definite structure to a skilled artisan, who would understand them as referring to a pump. Dkt. No. 76 at 3. Willow also points to Elvie's expert's declaration that "[a]t and around the alleged priority date for these patents, a variety of different styles of pumping system were known and implemented in breast pump devices, such as peristaltic style pumps . . . , diaphragm pumps, centrifugal pumps, and piston pumps." Stone Decl., Dkt. No. 75-10 ¶ 23. Willow analogizes to *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580 (Fed. Cir. 1996) (Bryson, J.), in which the court held "detent mechanism" was not a § 112 ¶ 6 term.

According to Elvie, these are means-plus-function terms. "Mechanism," it says, is a "nonce" word, which is only modified by the functional term "pumping." Dkt. No. 82 at 5. And while there were multiple types of pumping systems used in breast pumps at the time of invention, *id.* (citing Stone Decl., Dkt. No. 75-10 ¶¶ 58–59), a skilled artisan would not have understood "pumping mechanism" as including every type of pump. Instead, a skilled artisan "would have

understood that the types of pumping systems employed in other applications would have a significant effect on an in-bra wearable breast pump's operability and design such that there would be no generally understood meaning in the art that would encompass all pumps." *Id.* at 6. Finally, Elvie distinguishes *Greenberg* based on the court's reliance on definitions of "detent" that showed "specific means" for a "detent mechanism. *Id.*

These are not means-plus-function terms. To start, the Court presumes § 112(f) does not apply because the terms do not use the word "means." *See Williamson*, 792 F.3d at 1348 ("the failure to use the word 'means' . . . creates a rebuttable presumption . . . that § 112[(f)] does not apply"). But "the presumption can be overcome . . . if the challenger demonstrates that the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" *Id.* at 1349 (quoting *Watts v. XL Sys.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). "[A] critical question is whether the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, including either a particular structure or a class of structures." *MTD Prods. Inc. v. Iancu*, 933 F.3d 1336, 1341 (Fed. Cir. 2019) (internal quotation marks omitted); *see TecSec, Inc. v. Int'l Bus. Machs. Corp.*, 731 F.3d 1336, 1347 (Fed. Cir. 2013) (holding "wireless device means" does not invoke § 112 ¶ 6 because it denotes a class of structures).

Here, however, Elvie does not overcome the threshold presumption. Elvie argues for means-plus-function treatment based on the application in which the pump is used, but that's not part of § 112(f) analysis. For example, Elvie's expert explains "the device shape, pump flow architecture, and operational features of the pump disclosed . . . in each of the asserted patents results from using the specific style of pumping system disclosed," Stone Decl., Dkt. No. 75-10 ¶ 58, but that just attempts to limit claim scope to what's disclosed in the specification.

The test for determining whether § 112(f) applies does not depend on how well the structure "works" with the rest of the claimed or disclosed elements, but whether the term is used by skilled artisans in the pertinent art to designate structure. On that question, Elvie's expert declares "a variety of different styles of pumping system were known and implemented in breast pump devices, such as peristaltic style pumps . . . , diaphragm pumps, centrifugal pumps, and piston pumps." Stone Decl., Dkt. No. 75-10 ¶ 23. Given that, a skilled artisan would have understood "pumping mechanism" to a well known class of stuctures used in these devices at the time of invention.

This conclusion comports with Judge Bryson's reasoning in *Greenberg*. There, the claims at issue recited a wheel and a handle "having a cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals." *Greenberg*, 91 F.3d 1580 at 1582. The trial court concluded "detent mechanism" was a means-plus-function term in part because it "did not describe a particular structure but described any structure that performed a detent function." *Id.* at 1583. But according to the appellate court, "that a particular mechanism . . . is defined in functional terms is not sufficient to convert a claim element containing that term into a [means-plus-function term]." *Id.*

> Many devices take their names from the functions they perform. The examples are innumerable, such as "filter," "brake," "clamp," "screwdriver," or "lock." Indeed, several of the devices at issue in this case have names that describe their functions, such as "graspers," "cutters," and "suture applicators."
>
> "Detent" (or its equivalent, "detent mechanism") is just such a term. Dictionary definitions make clear that the noun "detent" denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms. *See Random House Unabridged Dictionary* 541 (2d ed. 1993) ("a mechanism that temporarily keeps one part in a certain position relative to that of another, and can be released by applying force to one of the parts"); *Webster's Third New International Dictionary* 616 (1968) ("a part of a mechanism

> (as a catch, pawl, dog, or click) that locks or unlocks a movement"); G.H.F. Nayler, *Dictionary of Mechanical Engineering* (4th ed. 1996) ("A catch or checking device, the removal of which allows machinery to work such as the detent which regulates the striking of a clock."). It is true that the term "detent" does not call to mind a single well-defined structure, but the same could be said of other commonplace structural terms such as "clamp" or "container." *What is important is not simply that a "detent" or "detent mechanism" is defined in terms of what it does, but that the term, as the name for structure, has a reasonably well understood meaning in the art.*

Id. (emphasis added).

That same reasoning applies here. "Pumping mechanism" does not call to mind a single well-defined structure, and although "pumping mechanism" might be defined in terms of what it does, the term, as the name for structure, has a reasonably well-understood meaning in the art. The evidence, including Dr. Stone's declaration, shows as much. And although Elvie attempts to distinguish *Greenberg* based on the appellate court's citation to definitions that allegedly provide "a specific function through specific means," Dkt. No. 82 at 6, at most those definitions provide *examples* of "specific means." In fact, the definitions on which the appellate court relied "are expressed in functional terms." *Greenberg*, 91 F.3d at 1583.

To summarize, Elvie has not shown these are means-plus-function terms. Accordingly, the Court will give these terms "plain and ordinary meaning" constructions.

B. "the suction force and the milk flow path both being directed generally upward relative to the bottom portion of the flange" ('816 Patent, Claim 1)

"milk is pumped from the breast to the collection container upwardly through the milk flow path relative to a bottom of the breast contacting structure" ('228 Patent, Claim 11)

Willow's Construction	Elvie's Construction
Plain and ordinary meaning.	"the suction force and the milk flow path both being directed generally upward and away from the lower end of the flange when upright" Alternatively, indefinite.

The claims at issue concern minimizing the loss of milk from the pumping system when the system is detached from the breast. To do that, the claims recite "a milk flow path," a "fluid container . . . connected to the milk flow path," and "the suction force [created by the pump mechanism] and the milk flow path both being directed generally upward relative to the bottom portion of the flange." '816 Patent, cl.1; '228 Patent at 51:25–27 (requiring extracted milk to flow "upwardly through the milk flow path relative to a bottom of the breast contacting structure").

This dispute centers on the last two words of Elvie's construction—"when upright." The need for construction, says Elvie, comes from Willow's infringement contentions, which it says orient the flange of the accused device on a horizontal axis to conclude that the accused device meets the "upward" requirements of the claims. Dkt. No. 82 at 14. In Elvie's view, this runs contrary to the figures, which show the flange oriented along a vertical axis. *Id.*

Willow says the disputed phrases are clear because the claims require a device to be "in use." Dkt. No. 75 at 9 (citing '816 Patent at 50:58–60). In fact, says Willow, the scope of "bottom portion" depends on that use. *Id.* at 10 (citing '816 Patent at 42:30–32, 50:58–60, and asserting "the bottom portion refers to any portion or region that is below the nipple receiving portion *during*

use" (emphasis added)). Thus, in Willow's view, "upward" and "upwardly" are relative to the bottom of the flange when the devices are being used.

Willow's reply adequately addresses Elvie's concern that the device orientation can be arbitrarily changed to satisfy the "upward" requirement of the claims. Inherently, this concern depends on interpreting "upward" relative to the ground, or gravity, but Willow says the "upward" direction is relative to the bottom of the flange. The Court agrees, although that somewhat deflects the problem by referencing another directional term, "bottom." A skilled artisan, however, would interpret "bottom" as if the device were attached to the breast while the user was in a "normal" position. To clarify that concept for the jury, the Court construes:

- "the suction force and the milk flow path both being directed generally upward relative to the bottom portion of the flange" in Claim 1 of the '816 Patent as "the suction force and the milk flow path both being directed generally upward relative to the bottom portion of the flange when the user is upright"; and
- "wherein milk extracted from the breast flows to the collection container upwardly through the milk flow path relative to a bottom of the breast contacting structure" in Claim 11 of the '228 Patent as "wherein milk extracted from the breast flows to the collection container upwardly through the milk flow path relative to a bottom of the breast contacting structure when the user is upright."

This is supported by the patents' figures, which show the device in the orientation it would be in if the user's torso were upright. To be clear, however, this construction does *not* require a user to be upright to infringe.

C. "contained within" ('624 Patent, Claim 1; '619 Patent, Claim 1, '229 Patent Claim 1); "contained completely within" ('816 Patent, Claim 1)

Willow's Construction	Elvie's Construction
Plain and ordinary meaning	"fully enclosed within"

Each of the claims at issue requires a pumping mechanism or controller "contained within"

or "contained completely within" a housing, body, or shell. For example, Claim 1 of the '624 Patent recites "a pumping mechanism contained within the housing" and "a controller contained within the housing." *See* '624 Patent at 53:19, 54:1; *see also* '619 Patent at 50:50 ("a vacuum pumping mechanism contained within the housing"); '229 Patent at 53:20–21 ("the pump mechanism and milk collection container are contained within the main body"); '816 Patent at 50:50–51 ("the pumping mechanism contained completely within the breast pump shell").

Elvie asserts prosecution disclaimer. Dkt. No. 82 at 16. More specifically, Elvie points to arguments made by Willow to overcome U.S. Publication 2013/0023821 (Khalil), where the examiner asserted Figure 10 (below) shows "the pump mechanism (81) and milk collection container (7') are contained within the main body (6', 6")." *Id.* (quoting '229 Patent File History, Dkt. No. 82-11 at 3891). Willow responded that the milk container was actually adjacent to and not contained within the main body. *Id.* (quoting '229 Patent File History, Dkt. No. 82-11 at 4133).

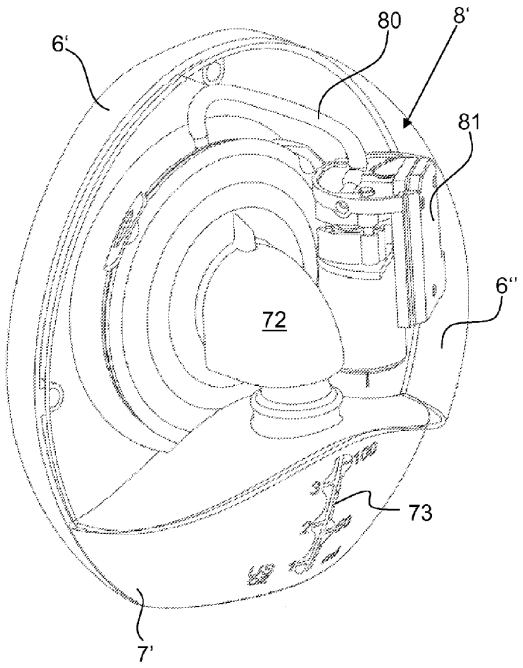

FIG. 10 of Khalil, showing a coupling part 72 within a main body composed of parts 6' and 6"

Willow suggests "contained within" and "contained completely within" must have different scope; otherwise "completely" in Claim 1 of the '816 Patent is superfluous. Dkt. No. 89 at 7. Thus, Willow implicitly treats "contained within" as "contained *partially* within." As for Elvie's disclaimer argument, Willow says it distinguished Khalil only as having a container "sized and shaped to reside on the exterior surface . . . of the breast pump system." *Id.* at 7.

Willow's argument is not persuasive. For one, the ordinary meaning of "contained within" is "contained completely within." A skilled artisan, or for that matter a lay person, would not read "contained within" as "contained *partially* within." As Willow noted during prosecution, "someone who is within a house is inside the house, not standing at its doorway . . . ." '229 Patent Prosecution History, Dkt. No. 82-11 at 4132. And although Willow suggests this conclusion renders "completely" superfluous in one claim, Dkt. No. 89 at 7, "[t]he preference for giving meaning to all terms . . . is not an inflexible rule that supersedes all other principles of claim construction." *SimpleAir, Inc. v. Sony Ericsson Mobile Commc'ns. AB*, 820 F.3d 419, 429 (Fed. Cir. 2016). Here, that preference is not enough to overcome the ordinary understanding of the claim language, especially when the allegedly superfluous term is in a different patent.

The prosecution history also supports this conclusion. The Examiner first noted Khalil's milk collection container includes a coupling part 72. '229 Patent Prosecution History, Dkt. No. 82-11 at 4125 (citing noting ¶ 0069 of Khalil identifies the coupling part 72 as part of the container). Thus, "the milk collection container 7' is contained within part 6' of main body 6' and 6" via locking lug 71 whereas part 6" of main body 6' and 6" closes over and has contained within coupling part 72 of milk collection container." *Id.* at 4126. In other words, the collection container is "partially within" the main body formed by the combination of parts 6' and 6". Willow replied:

Appellant is not trying to cover a milk collection container *configured on an outside*

> *of a main body*. Just as the pump mechanism is not recited as being positioned on the outside of the main body, the milk collection container is also not recited as being positioned on the outside of the main body.
>
> The Appellant also maintains that, as shown in Fig. 10 of Khalil et al., the milk collection container 7' is actually positioned adjacent to and *not contained within* cover 6" or the shell ring 6', the structure of Khalil et al. that bas been identified in the rejection of claim l as "the main body". As such, the disclosure of Khalil et al. does not anticipate the subject matter recited in the claims.

'229 Patent File History, Dkt. No. 82-11 at 4133 (emphasis added).

This argument is inconsistent with Willow's current position. If "contained within" means "contained partially or wholly within," "configured on the outside of the main body" should mean "partially or completely" outside of the main body, because there's no reason why "outside" and "within" should be treated differently. Given that, Willow's prosecution-history position only makes sense if "outside" means "completely outside." Otherwise, a container "partially outside" the main body would also be "partially within" the main body and meet claim limitation. Of course, it's more reasonable to read both "outside" and "within" as "completely outside" and "completely within," because that's the ordinary understanding of those words, and the burden is on the drafter to indicate those terms might mean something else. Accordingly, the Court concludes "contained within" and "contained completely within" have the same scope and construes the former as "contained completely within."

D. "pump mechanism comprises two drivers that displace a flexible member to generate vacuum pressure" ('005 Patent, Claim 1)

Willow's Construction	Elvie's Construction
Plain and ordinary meaning.	"pump mechanism comprises two drivers that displace compressible tube to generate vacuum pressure"

The parties dispute whether "flexible member" should be limited to "compressible tube."

Stressing the patent does not disclose a diaphragm pump system, Elvie argues its proposal is "consistent with" the intrinsic evidence. Dkt. No. 82 at 19. But consistency alone is not enough to warrant changing the ordinary meaning of the term. Elvie may have an argument about the sufficiency of the disclosure, but it does not present a dispute about the ordinary meaning of the claim language. Rather it argues "flexible member" should exclude a "diaphragm pump system" because the patent does not disclose the latter. Because that's not the proper analysis, the Court will give this term a "plain and ordinary meaning" construction.

E. "the breast pump automatically senses letdown" ('005 Patent, Claim 2)

Willow's Construction	Elvie's Construction
Plain and ordinary meaning	"the breast pump senses letdown via actuators and a compressible tube"

Asserting the '005 Patent discloses using data from motor drivers to detect fluid, Elvie says its construction is consistent with the evidence. Dkt. No. 82 at 20. But again, "consistency" with the evidence is not a basis for importing limitations from the specification into the claims, which Elvie attempts here. Clearly, the ordinary meaning of the language is not limited to a specific type of implementation, and there appears to be no dispute over what that meaning is. As such, the Court will therefore give this term a "plain and ordinary meaning" construction.

F. "chassis" ('005 Patent, Claim 1)

Willow's Construction	Elvie's Construction
Plain and ordinary meaning, which is "a component on which other parts are assembled"	"a component on which other parts are assembled, exclusive of the case or exterior of the device"

Claim 1 recites:

> 1. An automated system for controlling pumping cycles to pump

> milk from a human breast, the system comprising:
>
> a breast pump configured to fit within a bra, the breast pump including:
>
> a **chassis**;
>
> an outer shell attached to the **chassis**;
>
> a pump mechanism attached to the **chassis** between the outer shell and **chassis**;
>
> a battery contained between the outer shell and **chassis**;
>
> a circuit board contained between the outer shell and **chassis**;
>
> . . . ;
>
> a removeable breast contacting structure configured to contact and form a seal with the breast, the breast contacting structure including a nipple receiving portion below the pump mechanism; and
>
> . . .
>
> wherein when the removable breast contacting structure is removed, the pump mechanism, battery and circuit board are positioned between the outer shell and the **chassis** . . . .

'005 Patent at 28:2–21 (emphasis added).

The parties dispute the scope of "chassis." Willow agrees with part of Elvie's construction—that a "chassis" is "a component on which other parts are assembled"—but it disagrees that "chassis" excludes "the case or exterior of the device." Dkt. No. 75 at 16. In response, Elvie asserts the specification consistently describes the "chassis" as separate from the "housing" or "outer shell." Dkt. No. 82 at 20. Elvie characterizes Willow's "apparent" position as "the chassis and the outer shell can be the same component." *Id.* at 21. But Elvie's expert distinguishes between a chassis structure and a unibody structure, the latter of which has components "directly coupled to the exterior shell or housing of the device." *Id.* (quoting Stone Decl., Dkt. No. 75-10 ¶ 107 ("a

chassis is the backbone of a device that components, including even the outer body or housing, can be attached to and secured in place")).

This dispute implicates the well-established principle that "[w]here a claim lists elements separately, 'the clear implication of the claim language' is that those elements are 'distinct component[s]' of the patented invention." *Becton, Dickinson & Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (quoting *Gaus v. Conair Corp*., 363 F.3d 1284, 1288 (Fed. Cir. 2004)). Here, Claim 1 recites both "a chassis" and "an outer shell attached to the chassis," so the clear implication is that those are different components. Willow does nothing to effectively undercut that implication. Accordingly, with the understanding that the "chassis" and "outer shell" are different components, the Court adopts the common part of the parties' constructions: "a component on which other parts are assembled."

G. "a latch suction is maintained throughout a pumping session" ('229 Patent, Claim 1)

Willow's Construction	Elvie's Construction
Plain and ordinary meaning	"suction is more than zero during the entire pumping session"

The parties agree "a latch suction" is "a suction more than zero," *see* Dkt. No. 75 at 20 (asserting "a latch suction" should be defined as "a suction that is more than zero"), but dispute the scope of "throughout a pumping session." Asserting this phrase means "during the entire pumping session," Elvie points to the specification's explanation that existing systems reduce the latch suction to zero between extraction phases. Dkt. No. 82 at 23 (citing '229 Patent at 31:31–34). Moreover, during prosecution, Willow contested the examiner's assertion that "all breast pumps maintain a latch suction throughout pumping" as "simply not true." *Id.* (quoting '229 Patent File History, Dkt. No. 82-11 at 4134). Elvie also points to the '228 Patent and '005 Patent, which

explain that "latch suction" does not cycle down to atmospheric pressure but "maintains suction applied to the breast." *Id.* at 24.

In its reply, Willow fails to address Elvie's prosecution-history arguments. Instead, it points to Elvie's expert's declaration to show he understands the meaning of the phrase as written. It also notes that the claim recites "a latch suction" rather than "the latch suction," suggesting that as long as *some* latch suction is maintained during the entire pumping session, this claim limitation is met. Also, Willow contends that the specification teaches "that one latch suction does not need to be maintained during the entire pumping session because the pressure can go to zero, suggesting that a 'latch' was maintained even though suction went to zero." Dkt. No. 75 at 21 (citing '229 Patent at 3:58–61).

Elvie's position is more persuasive. First, if anything, the excerpt to which Willow points supports Elvie's interpretation by distinguishing between two distinct modes of operation: either (1) suction is *maintained* during the entire session, or (2) suction is *intermittent* because suction is reduced to zero at least once during the session. *See* '229 Patent at 3:58–61. The claim language clearly tracks the former.

Second, the prosecution history supports Elvie's position. This term originally appeared as the only limitation in Claim 6 of the underlying application. The examiner rejected that claim as anticipated by Khalil. '229 Patent File History, Dkt. No. 82-11 at 3892. The applicant appealed, arguing Khalil "does not disclose or mention maintaining a latch suction throughout a pumping session." *Id.* at 4099. In its reply brief, the applicant explained:

> It is simply not true that all pumps maintain a latch suction throughout a pumping session. In fact the specification of the present application acknowledges other existing systems where suction is reduced to zero at least once over the duration of a milk pumping session . . . .

Id. at 4134. This clearly distinguishes "systems where suction is reduced to zero [even just] once over the duration of the milk pump session" from "maintain[ing] a latch suction throughout a pumping session."

Finally, the Court rejects Willow's implication that maintaining *some* latch suction at all times—for example, by two pumping mechanisms alternating perfectly out of phase—satisfies the claim limitation. While "a" means "one or more," each of the "one or more" "latch suctions" must be maintained throughout the pumping session. The cases that emphasize "a" means "one or more" concern whether the claim is open or closed. So while a second "latched suction" "maintained through the pumping session" would not exclude an accused device from the scope of the claim, the claims nonetheless require at least one "latch suction" "maintained throughout the pumping session." Accordingly, the Court construes this phrase as "suction is more than zero during the entire pumping session."

H. "a location of the center of gravity of the breast pump device is, when in use, below a centre of the nipple tunnel when the milk container is empty" ('151 Patent, Claim 1)

Willow's Construction	Elvie's Construction
Indefinite	Plain and ordinary meaning, which is "generally upright"

Willow challenges this phrase in Elvie's asserted patent as indefinite because it recites "when in use." That three-word phrase, says Willow, "encompasses a wide range of orientations," and a skilled artisan would not know whether the product infringes because "the relative position of the center of gravity necessarily changes" based on the user's orientation. Dkt. No. 81 at 4–5.

Elvie replies that the ordinary meaning of "when in use" is "generally upright." Dkt. No. 77 at 11. It notes the specification "repeatedly identifies the device as being upright when in use."

Id. at 12 (citing '151 Patent at 36:57, 38:5, 39:59, 40:48, 56:41, 64:17, 64:56, 65:25, 66:27). Elvie also points to the prosecution history, where the examiner stated that "for the purposes of indicated allowable subject matter, the claim is interpreted as being in an in-use condition." Dkt. No. 77 at 15 (quoting '151 Patent File History, Dkt. No. 77-5 at 8).

This dispute is similar to the dispute about "upward" and "upwardly," *see* Part IV.B. *supra*, and the Court reaches a similar conclusion for similar reasons. To a skilled artisan, the only way the center-of-gravity requirement makes sense is if the user's torso is in an upright position—i.e., the user is standing or sitting. Thus, a skilled artisan would be reasonably certain the claim is referring to the position of the "center of gravity" in that "in use" orientation. The claim is not indefinite, and the Court construes "when in use" as "when the user is upright."

I. "single continuous surface" ('151 Patent, Claim 22)

Willow's Construction	Elvie's Construction
Indefinite	Plain and ordinary meaning.

Dependent Claim 22 requires that the breast shield of Claim 1 be "a one piece item that in use presents a single continuous surface to a nipple and a breast." '151 Patent at 72:28–30. Willow alleges "a skilled artisan would not understand whether a 'single continuous surface' has a smooth transition or may contain a perpendicular edge." Dkt. No. 81 at 11. Willow points to Elvie's expert's testimony that "sharp edges," like those defining the faces of a cube, are discontinuous, and then notes that under that definition Figure 3 would not satisfy Claim 22. *Id.* (citing Fletcher Depo. Tr., Dkt. No. 81-5 at 169:2–4, 169:20–170:2).

Elvie says the meaning of the term is clear. Pointing to its expert's testimony, it asserts "a skilled artisan 'would understand that a breast shield comprised of only one piece would only present as a single continuous surface to a nipple and breast because there are no other pieces to

create multiple surfaces or discontinuities in the surface.'" Dkt. No. 77 at 20 (citing Fletcher Decl., Dkt. No. 77-6 ¶ 130). Willow, says Elvie, misinterprets the figures, which do not have "sharp edges." The specification, it says, clearly describes and shows "feature 7B" as "curved." Dkt. No. 88 at 8–9 (citing '151 Patent at 9:30–31, 9:34–35, 13:63–65).

The Court agrees with Elvie. For one, Willow presents no evidence of a meaning of "continuous surface" that is different from that proposed by either Elvie or its expert. Rather, Elvie argues Willow's meaning is not supported by the figures. That, however, relates more to a written-description challenge than a dispute over the meaning of the phrase. Indeed, Elvie does not challenge Willow's suggested interpretation as incorrect. The Court therefore rejects Willow's indefiniteness challenge and will give this a "plain and ordinary meaning" construction.

J. Construction of the Design Patent Claims

As noted during the hearing, the Court concludes the construction of these design patents should be done in connection with a more complete record, such as during the summary judgment briefing or at trial. Accordingly, the Court declines to construe the design patent claims in this Order.

V. CONCLUSION

Disputed Term	The Court's Construction
"a pump mechanism" ('229 Patent, Claim 1) "a pumping mechanism" ('816 Patent, Claim 1; '624 Patent, Claim 1; '005 Patent, Claim 1) "a vacuum pumping mechanism" ('619 Patent, Claim 1)	Plain and ordinary meaning.

Disputed Term	The Court's Construction
"the suction force and the milk flow path both being directed generally upward relative to the bottom portion of the flange" ('816 Patent, Claim 1)	"the suction force and the milk flow path both being directed generally upward relatively to the bottom portion of the flange when the user is upright"
"wherein milk extracted from the breast flows to the collection container upwardly through the milk flow path relative to a bottom of the breast contacting structure" ('228 Patent, Claim 11)	"wherein milk extracted from the breast flows to the collection container upwardly through the milk flow path relative to a bottom of the breast contacting structure when the user is upright"
"contained within" ('624 Patent, Claim 1; '619 Patent, Claim 1; '229 Patent , Claim 1; '228 Patent, Claim 11) "contained completely within" ('816 Patent, Claim 1)	"contained completely within"
"pump mechanism comprises two drivers that displace a flexible member to generate vacuum pressure" ('005 Patent, Claim 1)	Plain and ordinary meaning
"the breast pump automatically senses let-down" ('005 Patent, Claim 2)	Plain and ordinary meaning
"chassis" ('005 Patent Claim 1)	"a component on which other parts are assembled"
"a latch suction is maintained throughout the pumping session" ('229 Patent, Claim 1)	"suction is more than zero during the entire pumping session"
"a location of the centre of gravity of the breast pump device is, when in use, below a centre of the nipple tunnel when the milk container is empty" ('151 Patent, Claim 1).	**"when in use":** "when the user is upright"
"a single continuous surface" ('151 Patent, Claim 22)	Plain and ordinary meaning

The Court **ORDERS** each party not to refer, directly or indirectly, to its own or any other party's claim-construction positions in the presence of the jury. Likewise, the Court **ORDERS** the parties to refrain from mentioning any part of this opinion, other than the actual positions adopted by the Court, in the presence of the jury. Neither party may take a position before the jury that contradicts the Court's reasoning in this opinion. Any reference to claim construction proceedings is limited to informing the jury of the position.

SIGNED this 9th day of January, 2025.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE